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(54) Title: PHOTOSYNTHETIC HYDROGEN PRODUCTION

(57) Abstract: A process for the production of hydrogen, comprising the steps of: (i) providing a photosynthetic microorganism having electron transfer capability through a photosynthetic "light" reaction pathway and through a respiratory electron transfer chain involving an oxidative phosphorylation pathway, and which expresses a hydrogenase, wherein regulation of the oxidative phosphorylation pathway is disrupted with the result that electron flow along the respiratory electron transfer chain toward cytochrome oxidase (complex IV) is reduced; ii)culturing the microorganism under microoxic and illuminated conditions; and (iii) collecting evolved hydrogen.